

Applicant: Kim et al.
Application No.: 10/077,565

Amendments to the Drawings:

Please replace drawing sheets 1-4 with the attached drawings sheets 1-6.

Applicant: Kim et al.
Application No.: 10/077,565

REMARKS

Claims 1-12 are currently pending in this application. The Examiner has rejected Claims 1-12 under 35 U.S.C. §102. The Examiner has objected to the drawings because elements in Figures 2 and 5 do not have descriptive legends. Additionally, the Examiner has objected to claims 1 and 5 due to informalities.

The Applicant has amended the specification to correct minor typographical errors. However, the Applicant has made no substantive amendments to the specification.

The Applicant submits replacement drawing sheets 1-6 to replace existing drawing sheets 1-4 in order to address the Examiner's objections to the drawings.

The Applicant has amended claims 1 and 5 in accordance with the Examiner's suggestion, where applicable, and only to add clarity to the claims. No substantive amendments to the claims were made. All amendments are fully supported in the specification and no new matter has been added.

Applicant: Kim et al.
Application No.: 10/077,565

Double Patenting – 35 U.S.C. §101

The Examiner provisionally rejected claims 1-12 under 35 U.S.C. §101 as claiming the same invention as that of claims 5-12 and 15-18, respectively, of copending Application No. 10/071917. The Applicants have canceled claims 5-12 and 15-18 in an amendment to the 10/071917 Application, and therefore respectfully request the Examiner to withdraw the 35 U.S.C. §101 double patenting rejection in the present Application.

Double Patenting – Obviousness-type

The Examiner rejected claims 1-12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of various copending Applications.

The Applicants are willing to submit a terminal disclaimer to overcome the rejections over the claims of the Applications the Examiner cited, if the Examiner believes the Application is otherwise allowable.

35 U.S.C. §102(e) – Dabak et al.

The Examiner rejected claims 1-12 as being anticipated by Dabak et al. (U.S. Ref. No. 6,775,260). In making the rejection, the Examiner stated:

Regarding claims 1, 5, 9, and 11, Dabak discloses a system called "Space time block coded transmit antenna diversity for WCDMA". Dabak teaches the system, see figs. 1-2 and col. 4, lines 9-52, comprising:

antennas ANT1 112 and ANT2 114 for transmitting CDMA data symbols

The space time transmit diversity (STTD) encoder 110 encodes symbols S having complex conjugate S^* (encoder for encoding said data field producing a second data field having complex conjugates of the symbols of said data field)

The S and S^* data symbols are inherently spread by using a different channelization code, since the Dabak's system is a CDMA system, wherein the S data code is associated with ANT1 112, and wherein S^* data code is associated with ANT2 114 (a first and second spreading device for spreading said first and second data fields, wherein said first spreading device spreads said first data field using a first channelization code and said second spreading device spreads said second data field using a second channelization code, each channelization code being uniquely associated with one of a first and second antennas).

Regarding claims 2, 6, 10, and 12 Dabak discloses the system performs the step of scrambling the S and S^* by a scrambling code C^K (208, 220, 214) for S and S^* data symbols. See figs. 1-2, col. 4, lines 33-40 (further comprising the step of scrambling said first and second spread data fields by a scrambling code associated with said base station).

Regarding 3 and 7, Dabak discloses that the data symbol S comprises a sub-data S_1 and a sub-data S_2 . See figure 1 (wherein the symbols of said first data field of symbols are grouped into a first and second sub-data field).

Regarding claims 4 and 8, Dabak discloses the STTD encoder 110 encodes the sub-data S_1 and its complex conjugate S_1^* and the sub-data S_2 and its negative complex conjugate $-S_2^*$. See figure 1 (wherein the symbols of said second data field of symbols are grouped into a third and fourth sub-data field, wherein said third sub-data field is the negative complex conjugate of said second sub-data field and said fourth sub-data field is the complex conjugate of said first sub-data field).

Applicant: Kim et al.
Application No.: 10/077,565

The Dabak et al. reference does not disclose, teach, nor suggest anywhere the use of different channelization codes. Indeed, in figure 2, the Dabak discloses, *inter alia*, encoded symbols D_1^1 and D_2^1 undergoing the *same* "user specific code" C^1 . There is no teaching that any different channelization code is used on the symbols in the Dabak reference. Furthermore, there is no teaching in the Dabak reference of "each channelization code being uniquely associated with one of a first and second antennas".

Applicants' amended independent claim 1, on the other hand, recites:

A user equipment (UE) including a transmitter for transmitting a data field of symbols, the transmitter comprising:

a first and second antenna for transmitting said data field of symbols, wherein said data field includes a first data field;

an encoder for encoding said data field producing a second data field having complex conjugates of the symbols of said data field; and a first and second spreading device for spreading said first and second data fields, wherein said first spreading device spreads said first data field using a first channelization code and said second spreading device spreads said second data field using a second channelization code, each channelization code being uniquely associated with one of said first and second antennas.

which is neither taught nor suggested in the Dabak et al. reference.

Accordingly, the Applicants' amended independent claim 1 is patentably distinct from the Dabak et al. reference.

The Applicants' claims 2, 3, and 4 depend, either directly or indirectly, from Applicants' patentable amended independent claim 1. Therefore, Applicants'

Applicant: Kim et al.
Application No.: 10/077,565

dependent claims 2, 3, and 4 are patentable for at least the same reasons as Applicants' patentable amended independent claim 1.

The Applicants' amended independent claim 5 recites:

A user equipment (UE) including a transmitter comprising a transmitter including:

a first and second means for transmitting a data field of symbols including a first data field;

a means for encoding said data field producing a second data field having complex conjugates of the symbols of said first data field; and

a first and second spreading means for spreading said first and second data fields, wherein said first spreading means spreads said first data field using a first channelization code and said second spreading means spreads said second data field using a second channelization code, each channelization code being uniquely associated with one of said first and second transmitting means.

Again, the use of channelization codes is not disclosed, taught, nor suggested by the Dabak et al. reference. Accordingly, the Applicants' claim as recited in amended independent claim 5 is patentably distinct from Dabak et al. reference.

Claims 6, 7, and 8 depend, either directly or indirectly, from Applicants' patentable amended independent claim 5, and are therefore patentable for at least the same reasons as Applicants' patentable amended independent claim 5.

Applicants' independent claim 9 recites:

A user equipment (UE) including a transmitter for transmitting a data field of symbols, the transmitter comprising:

a first and second antenna for transmitting said data field of symbols; and

a first and second spreading device for spreading said data field,

wherein said first spreading device spreads said data field using a first channelization code, producing a first spread data field, and said second spreading device spreads said data field using a second channelization code, producing a second spread data field, each channelization code being uniquely associated with one of said first and second antennas.

The use of channelization codes is not disclosed, taught, nor suggested by the Dabak et al. reference. Accordingly, the Applicants' claim as recited in independent claim 9 is patentably distinct from Dabak et al. reference.

Additionally, claim 10 depends from Applicants' patentable independent claim 9, and is therefore patentable for at least the same reasons as Applicants' patentable independent claim 9.

Applicants' independent claim 11 recites:

A user equipment (UE) including a transmitter comprising:
a first and second means for transmitting a data field of symbols; and
a first and second spreading means for spreading said data field, wherein said first spreading means spreads said data field using a first channelization code producing a first spread data field and said second spreading means spreads said second data field using a second channelization code producing a second spread data field, each channelization code being uniquely associated with one of said first and second transmitting means.

Applicant: Kim et al.
Application No.: 10/077,565

which is neither taught nor suggested in the Dabak et al. reference.

Accordingly, the Applicants' independent claim 11 is patentably distinct from the Dabak et al. reference.

Additionally, claim 12 depends from Applicants' patentable independent claim 11, and is therefore patentable for at least the same reasons as Applicants' patentable independent claim 11.

Applicant: Kim et al.
Application No.: 10/077,565

Conclusion

The Applicants thank the Examiner for his consideration and believes the application is in condition for allowance. Early and favorable reconsideration is respectfully solicited.

If the Examiner has any questions, or believes that a telephone conference would advance the prosecution of this application, the Examiner is requested to contact the Applicants' undersigned attorney.

Respectfully submitted,

Kim et al.

By Thomas A. Mattioli
Thomas A. Mattioli
Registration No. 56,773
(215) 568-6400

Volpe and Koenig, P.C.
United Plaza, Suite 1600
30 South 17th Street
Philadelphia, PA 19103

TAM/yil
Enclosures